IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re:	Application No. 10/692,460	*Confirmation No. 7241*
Filed:	October 22, 2003	
Applicants:	Gregory BERREVOETS et al.	This Amendment was electronically filed on November 24, 2009 using EFS-Web.
Title:	CROSSLINK FOR SECURING SPINAL RODS	
Art Unit:	3733	
Examiner:	Christina L. NEGRELLI	
Attorney Docket:	7115/79722	
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Commissioner for Patents
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AMENDMENT

Sir:

In response to the Office Action mailed September 1, 2009, Applicants respectfully submit the following:

Amendments to the Claims reflected in the listing of claims beginning on page 2 of this paper; and

Remarks beginning on page 12 of this paper.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A connecting assembly for interconnecting spinal rods secured to spinal vertebrae, the spinal rods each having a cylindrical outer surface, the connecting assembly comprising:

a pair of spinal rod connecting devices;

[[a]] an arcuate contact surface of [[each]] at least one of the connecting devices for seating on one of the spinal rods;

a locking member [[for]] having an arcuate surface, the arcuate surfaces of the one connecting device and the locking member each having opposite free ends and the locking member being shifted relative to the arcuate contact surface of the one connecting device between a clamped position with the ~~locking member clamping~~ the one spinal rod clamped between and against the arcuate contact ~~surface~~ surfaces of both the one connecting device and the locking member so that the arcuate surfaces seat flush tightly against the one spinal rod cylindrical outer surface with adjacent ones of the opposite free ends of the arcuate surfaces shifted into close proximity with one another and an unclamped position where the opposite free ends of the arcuate surfaces are all completely spaced from each other with the spinal rod released; [[and]]

a non-threaded rotatable actuator operable ~~to shift~~ so that rotation thereof in opposite rotary directions causes the locking member arcuate surface to shift toward and away from the arcuate contact surface of the one connecting device between the clamped and unclamped positions, the non-threaded actuator being configured to be rotatable in a clamping rotary direction by a predetermined rotary amount less than one full turn thereof to a predetermined

locked position thereof corresponding to the clamped position of the locking member on the spinal rod; and

an enlarged head portion of the actuator having an upper, central drive recess therein, and a shank portion integral with and depending from the head portion to be rotated therewith with the locking member being mounted to the shank portion for relative rotation therebetween.

2. (Canceled)

3. (Canceled)

4. (Currently Amended) A connecting assembly for interconnecting spinal rods secured to spinal vertebrae, the connecting assembly comprising:

a pair of spinal rod connecting devices;

a contact surface of [[each]] at least one of the connecting devices for seating on one of the spinal rods;

a locking member distinct from the one connecting device for being shifted relative thereto between a clamped position with the locking member clamping the spinal rod against the contact surface and an unclamped position with the spinal rod released; [[and]]

a biasing member distinct from the one connecting device that provides a bias force to urge the locking member to the unclamped position thereof; and

a rotatable actuator ~~at least partially disposed in each~~ mounted to the one connecting device ~~operable to shift the locking member between the clamped and unclamped positions, the actuator rotatable~~ and configured to be rotated by a predetermined rotary amount to a locked position thereof ~~corresponding~~ causing the locking member to be shifted against the bias force of the biasing member to the clamped position of the locking member on the spinal

rod ~~wherein at least one spinal rod connecting device further includes a spring retention member for biasing the locking member in the unclamped position~~.

5. (Currently Amended) The connecting assembly of claim 4 wherein the ~~spring retention~~ biasing member is compressed when the locking member is moved to the clamped position.

6. (Currently Amended) The connecting assembly of claim 5 wherein the ~~spring retention~~ biasing member is a split ring ~~located~~ mounted to extend around a shank of the rotatable actuator member, and the split ring is compressed to bring spaced ends thereof toward one another when the locking member is moved to the clamped position.

7. (Currently Amended) The connecting assembly of claim 1 wherein the rotatable actuator is located in a bore [[in]] that extends through the one spinal rod connecting device, and the bore includes a pair of arcuate camming surfaces for camming against the rotatable actuator.

8. (Currently Amended) A connecting assembly for interconnecting spinal rods secured to spinal vertebrae, the connecting assembly comprising:

a pair of spinal rod connecting devices;

a contact surface of [[each]] at least one of the connecting devices for seating on one of the spinal rods;

a locking member for being shifted between a clamped position with the locking member clamping the spinal rod against the contact surface and an unclamped position with the spinal rod released; and

a rotatable actuator operable to shift the locking member between the clamped and unclamped positions, the actuator rotatable by a predetermined rotary amount to a locked

position thereof corresponding to the clamped position of the locking member on the spinal rod wherein the rotatable actuator member has ~~a recess~~ an upper head portion and an elongate shank depending therefrom with the shank including an annular outer channel extending therearound, and the locking member is secured in the ~~recess~~ annular channel of the rotatable actuator member shank such that the rotatable actuator member shank and locking member may rotate relative to each other.

9. (Canceled)

10. (Currently Amended) A connecting assembly for interconnecting spinal rods secured to spinal vertebrae, the connecting assembly comprising:

a pair of spinal rod connecting devices for being connected to a respective pair of spinal rods;

a cross rod having opposite ends and a central longitudinal rod axis extending therebetween and being ~~connected to~~ integral with a first one of the pair of spinal rod connecting devices to be fixed relative thereto at a first one of the opposite rod ends;

a rod receiving member having a central longitudinal receiver axis and being ~~connected to~~ integral with a second one of the pair of spinal rod connecting devices to be fixed relative thereto, the rod receiving member including an elongate internal bore oriented along the receiver axis and being configured for adjustably receiving a second one of the opposite rod ends through an open end thereof so that the rod may be pivoted with respect to the receiver axis to provide the rod with variable angles relative thereto to allow the axes of the cross rod and rod receiving member to be either coincident or extend transversely to one another and so that the cross rod may be shifted axially along the rod axis to variable depths within the bore of the rod receiving member limited by a closed end of the bore opposite the open end at which the second spinal rod connecting device is fixed;

a clamp device for clamping against the cross rod received in the rod receiving member; and

a sleeve that extends about the rod receiving member and is shifted ~~therealong~~ axially along the receiver axis thereof for clamping the clamp device against the cross rod to fix the cross rod at an adjusted angle and an adjusted depth within the receiving member.

11. (Currently Amended) The connecting assembly of claim 10 wherein the internal bore of the rod receiving member receives the cross rod such that the cross rod may be adjustably rotated in the rod receiving member around [[a]] the longitudinal axis of the cross rod.

12. (Previously Presented) The connecting assembly of claim 11 wherein the clamp device may pivot to permit pivoting of the cross rod.

13. (Previously Presented) The connecting assembly of claim 12 wherein the clamp device includes an inner surface for mating with the external surface of the cross rod.

14. (Currently Amended) The connecting assembly of claim 13 wherein [[with]] at least a portion of the inner surface of the clamp device is arcuate for mating with the external surface of the cross rod, and the cross rod may be rotatably adjusted relative to the clamp device.

15. (Currently Amended) The connecting assembly of claim 10 wherein the cross rod includes a protrusion for retaining the ~~crossrod~~ cross rod within the rod receiving member.

16. (Currently Amended) [[A]] The connecting assembly ~~for interconnecting spinal rods secured to spinal vertebrae, the connecting assembly comprising:~~

~~a pair of spinal rod connecting devices for being connected to a respective pair of spinal rods;~~

~~a cross rod having opposite ends and a central longitudinal rod axis extending therebetween and being connected to a first one of the pair of spinal rod connecting devices at a first one of the opposite rod ends;~~

~~a rod receiving member having a central longitudinal receiver axis and being connected to a second one of the pair of spinal rod connecting devices, the rod receiving member including an internal bore oriented along the receiver axis and being configured for adjustably receiving a second one of the opposite rod ends so that the rod may be pivoted with respect to the receiver axis to provide the rod with variable angles relative thereto and so that the cross rod may be shifted axially along the rod axis to variable depths within the bore of the rod receiving member;~~

~~a clamp device for clamping against the cross rod received in the rod receiving member; and~~

~~a sleeve for clamping the clamp device against the cross rod to fix the cross rod at an adjusted angle and an adjusted depth within the receiving member~~ of claim 10 wherein the sleeve includes an internal structure that imparts a compression force on the clamp device for securing the cross rod.

17. (Previously Presented) The connecting assembly of claim 16 wherein the rod receiving member includes a terminal surface for limiting the position of the clamp device.

18. (Previously Presented) The connecting assembly of claim 17 wherein the clamp device is compressed between the terminal surface of the rod receiving member and the internal structure of the sleeve to secure the cross rod.

19. (Previously Presented) The connecting assembly of claim 17 wherein the internal structure of the sleeve contacts the clamp device directly.

20. (Previously Presented) The connecting assembly of claim 17 wherein the internal structure of the sleeve that contacts the clamp device includes a shoulder portion.

21. – 23. (Canceled)

24. (Previously Presented) A connecting assembly for interconnecting a pair of spinal rods secured to spinal vertebrae, the connecting assembly comprising:

a pair of spinal rod connecting devices each having an arcuate surface and a locking member for clamping the connecting assembly to the pair of spinal rods;

a cross rod being connected to one of the connecting devices, the cross rod having a solid construction without a slot formed therein;

a rod receiving member being connected to the other connecting device, the rod receiving member including an internal generally annular bore configured for receiving and guiding the solid cross rod for depth adjustment therein;

a clamp device configured for extending about and clamping against the solid cross rod when received in the rod receiving member;

a sleeve that is operable for clamping the clamp device against the solid cross rod; and

side openings in the receiving member that open to the bore to allow the solid cross rod to be pivoted in and out of the bore through the side openings, wherein the cross rod has lateral surfaces which may be pivoted relative to the rod receiving member into and out of the bore and through the rod receiving member side openings.

25. (Previously Presented) The connecting assembly of claim 24 wherein the cross rod has a central longitudinal axis, and the rod receiving member has a central longitudinal axis.

26. (Previously Presented) The connecting assembly of claim 24 wherein the cross rod may be pivoted to a position such that the cross rod is protruding from one of the side openings.

27. (Previously Presented) A connecting assembly for interconnecting a pair of spinal rods secured to spinal vertebrae, the connecting assembly comprising:

a pair of spinal rod connecting devices each having an arcuate surface and a locking member for clamping the connecting assembly to the pair of spinal rods;

a cross rod being connected to one of the connecting devices;

a rod receiving member being connected to the other connecting device, the rod receiving member including an internal bore for receiving the cross rod;

a clamp device for clamping against the cross rod when received in the rod receiving member;

a sleeve for clamping the clamp device against the cross rod;

side openings in the receiving member that open to the bore to allow the cross rod to be pivoted in and out of the bore through the side openings, wherein the cross rod has lateral surfaces which may be pivoted relative to the rod receiving member into and out of the side openings;

wherein the cross rod has a central longitudinal axis, and the rod receiving member has a central longitudinal axis;

wherein the lateral surfaces of the cross rod are beveled towards the central longitudinal axis of the cross rod at an end of the cross rod.

28. (Previously Presented) The connecting assembly of claim 1 wherein the actuator member is rotatable by about 80° to about 110° to the locked position thereof corresponding to the clamped position of the locking member.

29. (Previously Presented) The connecting assembly of claim 1 wherein the actuator member has an axis of rotation and the actuator member shifts axially along the axis of rotation during rotation of the actuator member about the axis of rotation to the locked position.

30. (Currently Amended) A connecting assembly for interconnecting spinal rods secured to spinal vertebrae, the connecting assembly comprising:

a pair of spinal rod connecting devices each having a body with a lower arcuate surface that opens downwardly for being ~~connected to~~ lowered down onto a respective pair of spinal rods to be seated thereon;

a cross rod having opposite ends and a central longitudinal rod axis extending therebetween and being ~~connected to~~ integral with an upper portion of the body of a first one of the pair of spinal rod connecting devices to be fixed relative thereto at a first one of the opposite rod ends so that the cross rod is generally higher than the downwardly opening, lower arcuate surface of the first spinal rod connecting device;

a rod receiving member having a central longitudinal receiver axis and being connected to a second one of the pair of spinal rod connecting devices, the rod receiving member including an internal bore oriented along the receiver axis and being configured for adjustably receiving a second one of the opposite rod ends so that the rod may be pivoted with respect to the receiver axis to provide the rod with variable angles relative thereto to allow the axes of the cross rod and rod receiving member to be either coincident or extend transversely to one another and so that the cross rod may be shifted axially along the rod axis to variable depths within the bore of the rod receiving member;

a clamp device for clamping against the cross rod received in the rod receiving member; and

a sleeve for clamping the clamp device against the cross rod to fix the cross rod at an adjusted angle and an adjusted depth within the receiving member wherein the sleeve is rotated to clamp the clamp device against the cross rod.

REMARKS

Claims 1-20 and 24-30 are pending. Claims 2, 3, and 9 are canceled herein. Claims 24-27 are allowed. Accordingly, claims 1, 4-8, 10-20, and 28-30 are at issue.

Claims 1-6, 8-20, and 20-30 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,545,167 to Lin. Claim 7 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Lin.

The rejections, as they may apply to the claims presented herein, are respectfully traversed.

Claim 1 is directed to a connecting assembly for interconnecting spinal rods secured to spinal vertebrae with the spinal rods each having a cylindrical outer surface. The connecting assembly includes a pair of spinal rod connecting devices. As amended, claim 1 calls for an arcuate contact surface of at least one of the connecting devices for seating on one of the spinal rods. Amended claim 1 further calls for a locking member having an arcuate surface with the arcuate surfaces of the one connecting device and the locking member each having opposite free ends. The locking member is able to be shifted relative to the arcuate contact surface of the one connecting device between a clamped position with the one spinal rod clamp between and against the arcuate contact surfaces of both the one connecting device and the locking member so that the arcuate surfaces seat flush tightly against the one spinal rod cylindrical outer surface with adjacent ones of the opposite free ends of the arcuate surfaces shifted into close proximity with one another, and an unclamped position where the opposite free ends of the arcuate surfaces are all completely spaced from each other with the spinal rod released. Claim 1, as amended, calls for a non-threaded rotatable actuator operable so that rotation thereof in opposite rotary directions causes the locking member arcuate surface to shift toward and away from the arcuate contact surface of the one connecting device between the clamped and unclamped positions. Amended claim 1 further recites an enlarged head portion of the actuator having an upper, central drive recess therein, and a shank portion integral with and

depending from the head portion to be rotated therewith with the locking member being mounted to the shank portion for relative rotation therebetween. Lin does not disclose or suggest the recited arcuate surfaces of the connecting device and locking member, the rotation of a rotatable actuator that causes the locking member arcuate surface to shift toward and away from the arcuate contact surface of the connecting device, or the central drive recess of an enlarged head portion of an actuator with the actuator also having a shank portion integral with the head portion with the locking member mounted to the shank portion for relative rotation therebetween, as recited in amended claim 1.

Lin discloses a retaining bolt 200 having a lower retaining ring portion 210 that has a single arcuate internal surface for engaging about the spinal rod cylindrical surface. The open retaining bolts 200 of FIG. 5 also include opposite, spaced rectangular head portions 220. To clamp the single arcuate surface on the spinal rods, the rectangular head portions are pivoted toward each other, as indicated by the arrows in FIG. 5, and the rectangular head portions are maintained in their pivoted together condition by insertion through the fitting hole 530 of the washer 500. Thereafter, the retaining bolts 200 are slid into slots of the U-shaped ends of the connection element 300. The fastening nuts 400 are then placed over the rectangular heads and the nuts 400 and rectangular heads 220 are provided with cooperating cam surfaces so that rotation of the nuts causes the retaining bolts 200 to be drawn upwardly to bring the clamped spinal rods into engagement with the knurls provided on the underside of the connection elements 300, as shown in FIG. 6.

In the first instance, it is clear Lin does not show the arcuate surfaces of the locking member and connecting device of amended claim 1 that each include opposite free ends. Instead, the retaining ring portion 210 of the retaining bolts 200 of Lin only include a single internal arcuate surface such that there is only one pair of opposite free ends thereof. As such, Lin does not and cannot disclose the unclamped position of amended claim 1 where the opposite free ends of the arcuate surfaces of the connecting device and the locking member are all completely spaced from each other.

In the Action, it is asserted that rotation of the fastening nut 400 shifts the rod into contact with the inner arcuate surface of the retaining ring portion 210. However, as described above, the internal arcuate surface contacts the spinal rod by pivoting the rectangular head portions 220 together, whereas rotation of the fastening nut 400 only draws the already clamped spinal rods up toward the underside of the connection element 300. Thus, Lin does not disclose or suggest a rotatable actuator that is operable so that rotation thereof in opposite directions causes a locking member arcuate surface to shift toward and away from an arcuate surface of a connecting device, as required in amended claim 1.

Further, claim 1 requires that the rotatable actuator include an enlarged head portion having an upper, central drive recess therein, and a shank portion integral with and depending from the head portion to be rotated therewith with the locking member being mounted to the shank portion for relative rotation therebetween. The fastening nut 400 taught by Lin clearly fails to include the enlarged head portion and integral shank portion required by amended claim 1. Further, the fastening nut 400 of Lin has outer drive surfaces rather than having an enlarged head portion with an upper, central drive recess therein, as recited in amended in claim 1. In this regard, the fastening nut 400 of Lin requires much more space be provided during surgery for a tool to grip around the outer flats of the fastening nut 400, whereas the rotatable actuator of amended claim 1 including the upper, central drive recess, allows for a driver having a narrower profile to be used for rotating the actuator. In addition, the fastening nut 400 completely lacks an integral shank portion that rotates therewith. As such, Lin also clearly fails to disclose or suggest a locking member that is mounted to a shank portion for relative rotation therebetween, as called for in amended claim 1.

Accordingly, it is believed claim 1, and claims 7, 28, and 29 which depend therefrom, are allowable over Lin.

Claim 4 is directed to a connecting assembly for interconnecting spinal rods secured to spinal vertebrae and calls for a pair of spinal rod connecting devices, and a contact surface of at least one of the connecting devices for seating on one of the spinal rods. As amended,

claim 4 calls for a locking member distinct from the one connecting device for being shifted relative thereto between a clamped position with the locking member clamping the spinal rod against the contact surface and an unclamped position with the spinal rod released. Amended claim 4 further recites a biasing member distinct from the one connecting device that provides a bias force to urge the locking member to the unclamped position thereof. Claim 4, as amended, recites a rotatable actuator mounted to the one connecting device and configured to be rotated by predetermined rotary amount to a locked position thereof causing the locking member to be shifted against the bias force of the biasing member to the clamped position of the locking member on the spinal rod. Lin fails to disclose or suggest the recited locking member distinct from the connecting device for being shifted relative thereto, the recited biasing member distinct from the connecting device that provides a bias force to urge the locking member to the unclamped position, or the rotatable actuator that is configured to be rotated to cause the locking member to be shifted against the bias force of the biasing member to the clamped position, as required in amended claim 4.

As previously discussed, Lin teaches a single retaining bolt 200 including the lower retaining ring portion 210 and the upper rectangular head portions 220 thereof. In the Action, it is asserted that the contact surface of the connecting device is the inner surface of the retaining ring portion, while the locking member is the rectangular head portion 220 of the retaining bolt 200. However, amended claim 4 specifies that the locking member is distinct from the connecting device. In addition, one of the rectangular heads 220 is asserted as meeting the limitation directed to the previously recited spring retention member. However, amended claim 4 recites a biasing member distinct from the one connecting device that provides a bias force to urge the locking member to the unclamped position thereof. As is clear, the rectangular head portion 220 is part of the retaining bolt 200 including the retaining ring portion 210 thereof and thus is not distinct from the retaining ring portion, unlike the biasing member that is distinct from the connecting device recited in amended claim 4. Further, the rectangular head portion 220 does not provide a bias force that urges the retaining

bolt 200 to its unclamped position. Rather, it is the resilient nature of the configuration of the retaining bolt 200 itself, and not a distinct biasing member, that provides the bias force to urge it to its unclamped position. In this regard, and as previously discussed, clamping of the retaining ring portion 210 on the spinal rod is not achieved by rotation of the fastening nut 400, but instead is caused by pivoting of the rectangular head portions 220 toward each other where they are held in their clamped pivoted together position by the washer 500. Rotation of the fastening nut 400 only acts to cause the already clamped spinal rod to be drawn upwardly into engagement with the underside of the connection element 300. Thus, Lin does not disclose or suggest the recited rotatable actuator of amended claim 4 that is configured to be rotated to cause the locking member to be shifted against the bias force provided by the distinct biasing member to the clamped position of the locking member on the spinal rod.

Accordingly, it is believed claim 4, and claims 5 and 6 which depend cognately therefrom, are allowable over Lin.

Claim 8 is directed to a connecting assembly for interconnecting spinal rods secured to spinal vertebrae and calls for a pair of spinal rod connecting devices, a contact surface of at least one of the connecting devices for seating on one of the spinal rods, a locking member for being shifted between a clamped position with the locking member clamping the spinal rod against the contact surface and an unclamped position with the spinal rod released, and a rotatable actuator operable to shift the locking member between the clamped and unclamped positions. As amended, claim 8 requires that the rotatable actuator member have an upper head portion and an elongate shank depending therefrom with the shank including an annular outer channel extending therearound with the locking member being secured in the annular channel of the rotatable actuator member shank for relative rotation therebetween. Lin fails to disclose or suggest a rotatable actuator member having an upper head portion and an elongate shank with the elongate shank having an annular channel in which a locking member is secured, as recited in amended claim 8.

In the Action, the fastening nut 400 is relied upon as meeting the limitation directed to the rotatable actuator. However, amended claim 8 requires that the actuator have an upper head portion and an elongate shank depending therefrom. The fastening nut 400 clearly fails to include a corresponding elongate shank, as required in amended claim 8. Further, claim 8 specifies that the shank has an annular outer channel that extends therearound. The fastening nut 400 of Lin only has flats for being engaged by a tool and otherwise does include structure similar to the annular outer channel required claim 8. Moreover, since the fastening nut 400 does not have an elongate shank, Lin cannot and does not disclose or suggest the recited annular channel in an elongate shank of the rotatable actuator of amended claim 8. Amended claim 8 also requires that the rotatable actuator shank be rotatable relative to the locking member. No such arrangement between a rotatable actuator shank and locking member is disclosed or suggested by Lin. Accordingly, it is believed claim 8 is allowable over Lin.

Claim 10 is directed to a connecting assembly for interconnecting spinal rods secured to spinal vertebrae and includes a pair of spinal rod connecting devices for being connected to a respective pair of spinal rods. As amended, claim 10 recites a cross rod having opposite ends and a central longitudinal rod axis extending therebetween, and being integral with a first one of the pair of spinal rod connecting devices to be fixed relative thereto at a first one of the opposite rod ends. Amended claim 10 further recites a rod receiving member having a central longitudinal receiver axis and being integral with a second one of the pair of spinal rod connecting devices to be fixed relative thereto. The rod receiving member includes an elongate internal bore oriented along the receiver axis and being configured for adjustably receiving a second one of the opposite rod ends through an open end thereof so that the rod may be pivoted with respect to the receiver axis to provide the rod with variable angles relative thereto to allow the axes of the cross rod and rod receiving member to be either coincident or extend transversely to one another and so that the cross rod may be shifted axially along the rod axis to variable depths within the bore of the rod receiving member limited by a closed end of the bore opposite the open end at which the second spinal rod

connecting device is fixed. Claim 10 also calls for a clamp device for clamping against the cross rod received in the rod receiving member. Amended claim 10 further calls for a sleeve that extends about the rod receiving member and which is shifted axially along the receiver axis thereof for clamping the clamp device against the cross rod to fix the cross rod at an adjusted angle and an adjusted depth within the receiving member. Lin does not disclose or suggest a cross rod integral with a spinal rod connecting device or a rod receiving member integral with a spinal rod connecting device, nor does Lin disclose or suggest a rod receiving member that has an open end and a closed end at which a spinal rod connecting device is fixed or a rod receiving member having a bore configured to adjustably receive a rod end for pivoting therein, as recited in amended claim 10.

In the Action, the retaining ring portions 210 of the retaining bolts 200 are identified as the corresponding to the recited spinal rod connecting devices. However, it is clear that neither one of these retaining bolts 200 is integral with the connection element 300 or the U-shaped fitting portion 310' thereof. In fact, Lin teaches the exact opposite of having the retaining bolt 200 integral with the U-shaped fitting portion 310' and being fixed relative thereto, as required in claim 10. Instead, the retaining bolt 200 is a separate component from the connection element 300, and is adapted to be slid to various positions in the slot of the U-shaped fitting portion 310' thereof, rather than being integral with and fixed thereto. Similarly, the washer 500 is identified as corresponding to the recited rod receiving member of claim 10. However, Lin teaches that the washer 500 is a separate component from the connection element 300 rather than being formed integrally therewith, and is adapted to be slid along the U-shaped fitting portion 310' along with the retaining bolt 200 extending therethrough rather than being fixed relative to the connection element 300, as required in amended claim 10. Further, Lin nowhere discloses or suggests that the connection element 300 be received in an elongate internal bore of the washer 500 or a bore of the washer 500 be configured so that the connection element 300 can be pivoted with respect thereto for providing the connection element 300 with variable angles relative thereto, as required in

amended claim 10. In this regard, the washer 500 of Lin does not have a bore, and certainly not one configured so that the assembly of Lin allows for the corresponding axes of the connection element 300 and the washer 500 to extend transversely to one another, as specified in amended claim 10. In this regard, rather than a bore, it can be seen that the washer 500 has depending legs sized so that it can be guided to slide along the U-shaped fitting portion 310' of the connection element 300 with their respective axes aligned, but otherwise the fitting portion 310' cannot be pivoted relative to the washer 500 so that their respective axes extend transversely to one another.

Accordingly, it is believed that claim 10, and claims 11-20 which depend cognately therefrom, are allowable over Lin.

Amended claim 30 is directed to a connecting assembly and calls for a pair of spinal rod connecting devices each having a body with a lower arcuate surface that opens downwardly for being lowered down onto a respective pair of spinal rods to be seated thereon. Amended claim 30 recites a cross rod having opposite ends and a central longitudinal rod axis extending therebetween and being integral with an upper portion of the body of a first one of the pair of spinal rod connecting devices to be fixed relative thereto at a first one of the opposite rod ends so that the cross rod is generally higher than the downwardly opening lower arcuate surface of the first spinal rod connecting device. Claim 30 is further amended to describe the pivoting of the rod with respect to the axis of the rod receiving member so as to allow the axes of the cross rod and rod receiving member to be either coincident or extend transversely to one another. Lin does not disclose or suggest spinal rod connecting devices each having a body with a lower arcuate surface that opens downwardly for being lowered down onto a respective pair of spinal rods to be seated thereon and a cross rod that is integral with an upper portion of the body of one of the spinal rod connecting devices so that the cross rod is generally higher than the downwardly opening lower arcuate surface, as required in amended claim 30.

As can be seen in FIG. 5, the lower retaining ring portions 210 of the retaining bolts 200 disclosed by Lin have their corresponding arcuate surfaces opening upwardly. In addition, the connection element 300 is not integral with an upper portion of the body of the retaining bolt 200 to be fixed relative thereto, as recited in amended claim 30. In this regard, the connection element 300 is not higher than a downwardly opening lower arcuate surface of the retaining bolt since the retaining bolt has no such downwardly opening lower arcuate surface, as previously discussed. Since Lin does not teach downwardly opening arcuate surfaces, the bolts 200 of Lin face a significant disadvantage in that they cannot be lowered down onto spinal rods, like the recited spinal rod connecting devices of amended claim 30. With respect to the washer 500 identified as corresponding to the rod receiving member in the Action, the washer 500 does not have a bore, let alone a bore that is configured to allow the connection element 300 to pivot with respect to the washer axis so that the corresponding axes of the connection element 300 and washer 500 can extend transversely to one another, as set forth in amended claim 30. Accordingly, claim 30 is believed allowable over Lin.

Based on the foregoing, reconsideration and allowance of claims 1, 4-8, 10-20, and 28-30 are respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required with respect to this communication, or credit any overpayment, to Deposit Account No. 06-1135.

Respectfully submitted,

FITCH, EVEN, TABIN & FLANNERY

Dated: November 24, 2009

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